07 - 07 -05

AF

PTO/SB/21

U.S. Department of Commerce
Patent and Trademark Office
PATENT

APPEAL BRIEF TRANSMITTAL FORM

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Customer No.: 23696
Attorney Docket No.: 010555
In Re Application of: Hutchison, et al.
Serial Number: 10/034,776
Filed: 12/21/01
Examiner: Angelica Perez
Group Art Unit: 2684

Dear Sir:
Transmitted herewith for filing is an Appeal Brief in the above identified application.

CLAIMS	(a) Number Remaining After Amendment	(b) Highest Number Previously Paid For	(c) Extra Claims	Large Entity Fee	Fee Paid
Total*	36	36	0	x $50 =	$0
Independent**	7	7	0	x $200 =	$0
Multiple Dependent Claim(s): ☐ Yes ☐ No				$360	$
EXTENSION FEES		☐ One Month		$120	$
		☐ Two Months		$450	$
		☐ Three Months		$1020	$
TERMINAL DISCLAIMER				$130	$
				TOTAL FEE	$0

*If the number in column a is less than 20, enter 0 in column c.
**If the number in column a is less than 3, enter 0 in column c.

4. ☐ Fee check in the amount of $_____ is enclosed to pay for any claim and/or extension fees.
5. ☒ Please charge Deposit Account No. 17-0026 of QUALCOMM Incorporated the amount of $0. The Commissioner is hereby authorized to charge payment of any additional fees that may be required, or credit any overpayment to said Deposit Account No. 17-0026. A duplicate of this sheet is enclosed for fee processing.
6. ☒ The Commissioner is further hereby authorized to charge to said Deposit Account No. 17-0026, pursuant to 37 CFR 1.25(b), any fee whatsoever which may become properly due or payable, as set forth in 37 CFR 1.16 to 37 CFR 1.18 inclusive, for the entire pendency of this application without specific additional authorization.

Date: 7/5/05

Signature: _____
George C. Pappas, Reg. No. 35,065
858-651-1306

/BY
KENYON S. JENCKES
REG. NO. 41,873

QUALCOMM Incorporated
Attn: Patent Department
5775 Morehouse Drive
San Diego, California 92121-1714
Telephone: (858) 658-5787
Facsimile: (858) 658-2502

CERTIFICATE OF MAILING/TRANSMISSION (37 CFR 1.8(a))

I hereby certify that this correspondence is, on the date shown below, being:

MAILING

☒ deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Depositor's Name: Darla Kasmedo
(type or print name)

Date: 7/5/05

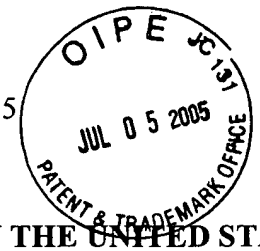
FACSIMILE

☐ transmitted by facsimile to the Patent and Trademark Office.

Depositor's Name: _____
(type or print name)

Signature: _____

Docket: 010555



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant:	James A. Hutchison, IV	Confirmation No.	9013
Serial No.:	10/034,776	Customer No.:	23696
Filed:	December 21, 2001	Examiner:	Angelica Perez
		Group Art Unit:	2684
		Docket No.:	010555
Title:	ARBITRATED AUDIO COMMUNICATION WITH REDUCED LATENCY		

BRIEF ON APPEAL

Mail Stop: Appeal Brief-Patents
Commissioner for Patents
Alexandria, VA 22313-1450

Sir:

This is an Appeal from the final Office Action mailed on December 16, 2004, finally rejecting claims 1-36, and the Advisory Action mailed on April 7, 2005, affirming the final rejection of the claims. The Notice of Appeal was filed on May 16, 2005.

Applicant's paid the $500.00 required fee for filing this Brief with a Notice of Appeal on May 16, 2005. Any additional fees that may be required or credit any overpayment to Deposit Account No. 17-0026.

TABLE OF CONTENTS

	Page
Real Party in Interest	3
Related Appeals and Interferences	3
Status of Claims	3
Status of Amendments	3
Summary of Claimed Subject Matter	4
Grounds of Rejection to be Reviewed on Appeal	12
Argument	12
Appendix: Claims on Appeal	26

REAL PARTY IN INTEREST

The Real Party in Interest is Qualcomm, Inc. of San Diego, California.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences for the above-referenced patent application.

STATUS OF CLAIMS

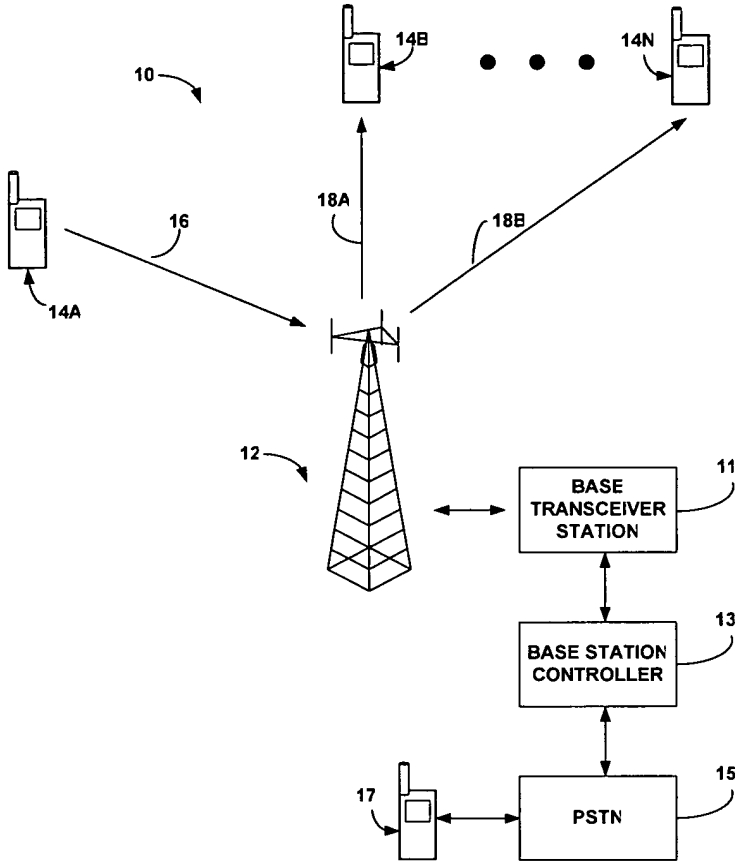
Claims 1-36 are pending and are the subject of this Appeal. The claims are set forth in the Appendix. Claims 1-36 stand rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application No. 0,321,672 A2 to Lynk (Lynk) in view of Great Britain Published Patent Application No. 2,336,975A to Stevens (Stevens).

STATUS OF AMENDMENTS

An After-final Amendment in response to the Final Office Action was filed on March 17, 2005 under 37 C.F.R. § 1.116. The Amendment corrected a minor typographical error in claim 35. In the Advisory Action mailed April 7, 2005, the Examiner indicated that the after-final amendment would be entered for purposes of appeal.

SUMMARY OF CLAIMED SUBJECT MATTER

In general, all pending claims relate to audio communication in a point-to-multipoint communication system.[1] To permit communication among multiple users, a conventional point-to-multipoint communication system provides arbitration of access to a broadcast link by the users.[2] In this manner, only one user at a time may send audio to other users.[3]



A point-to-multipoint communication system is depicted in FIG. 1 of Appellant's disclosure, which is reproduced above. As shown in FIG. 1, a wireless base station 12 permits a number of wireless communication devices 14A-14N (hereinafter 14) to communicate with one

[1] Paragraphs [0002] and [0019].
[2] Paragraph [0002].
[3] Paragraph [0002].

another and with other devices on networks connected to system 10.[4] As shown in FIG. 1, using wireless communication device 14A, a participant may send an outgoing communication 16.[5]

Participants associated with wireless communication devices 14B-14N receive the communication sent by wireless communication device 14A as incoming communications 18A, 18B, respectively.[6] Base station 12 may include a base transceiver station (BTS) 11 that interacts with a base station controller (BSC) 13 and public switched telephone network (PSTN) 15 to facilitate communications with one or more wired telephones 17 or other wired telephony devices, e.g., computer telephony systems.[7]

An example of a point-to-multipoint communication system is a push-to-talk system in which participants communicate with one another as a group using wireless and/or wired communication devices.[8] Typically, a push-to-talk system relies on a shared communication link, sometimes called a broadcast link or multi-cast link, over which audio communications are received simultaneously by multiple communication devices.[9] As mentioned above, only one user can transmit information to other users at a given time.[10] However, all users who participate in the point-to-multiple communication can simultaneously listen to the speaker via the broadcast link.[11]

A user who desires to communicate with the other users may press a talk button on a communication device.[12] In response, the communication device transmits a request for access to an arbitration controller.[13] An arbitration controller, which may be integrated with wireless network equipment in the system, limits access to the broadcast link to only one participant at a given time.[14] The arbitration controller processes the request and replies with an indication that access is either granted or denied.[15]

---

[4] See also paragraph [0025].
[5] Paragraph [0025].
[6] Paragraph [0025].
[7] Paragraph [0028].
[8] Paragraph [0002].
[9] Paragraph [0002].
[10] Paragraph [0002].
[11] Paragraph [0002]
[12] Paragraph [0003].
[13] Paragraph [0003].
[14] Paragraph [0003].
[15] Paragraph [0003].

If access is granted, the requesting user has sole access to the broadcast link for transmission of audio communications to the other users.[16] In this case, the requesting user may begin to speak, and the communication device begins to transmit the audio communication.[17] When more than one user desires to speak, the arbitration controller arbitrates access to the broadcast link among the participants.[18] In a conventional system, if access is denied, the communication device operated by the requesting user is unable to transmit the audio communication .

The claimed invention relates to arbitration techniques that accelerate access to the broadcast link, thereby reducing system latency. Latency, i.e., a delay in the start of communication by a participant, can be disconcerting to participants attempting to conduct a conversation.[19] When there is a delay in obtaining link access, the resulting latency can introduce awkward pauses during the course of a conservation carried out over a point-to-multipoint system.[20] In a typical point-to-multipoint system, a user sends an access request, then waits for grant of the access request, and then sends audio if and when the access request is granted.[21]

The claimed invention seeks to reduce the delay between transmission of the access request and transmission of the audio. To obtain access to the broadcast link, in accordance with the claimed invention, a user transmits both a request for access and audio representing a desired audio communication to an arbitration controller.[22] In this case, the user utters speech immediately, and does not wait for an indication that the access request has been granted.[23] The wireless communication device transmits the audio with the access request.

If the access request is denied, the audio may be discarded.[24] In most instances of typical polite conversation, however, the request will be granted.[25] As a result, the audio can be

---

[16] Paragraph [0003].
[17] Paragraph [0003].
[18] Paragraph [0003].
[19] Paragraphs [0021] and [0044].
[20] Paragraphs [0021] and [0024].
[21] Paragraph [0002].
[22] Paragraph [0019].
[23] Paragraphs [0019] and [0023].
[24] Paragraphs [0021], [0032] and [0037].
[25] Paragraph [0021].

transmitted immediately to the other users, significantly reducing latency in the system. [26] In particular, by the time the access request has been granted, the audio has already been transmitted to equipment within the network, such as an arbitration controller.

Upon grant of the access request, the equipment directs transmission of the audio that has already been received, rather than waiting to receive the audio in the first instance. Transmission of the audio may immediately follow the access request.[27] In some embodiments, the access request may be integrated with the audio communication.[28] For example, detection of the audio itself may serve as the access request for an arbitration controller, eliminating the need for a separate request to be communicated.[29]

As a further alternative, detection of the audio by the speaker's wireless communication device may trigger transmission of an access request and the audio to the arbitration controller.[30] In either case, by transmitting the audio with the access request, excessive delay can be eliminated between the transmission of the access request and the transmission of the audio.[31] Again, it is not necessary to wait for an acknowledgement that the access request has been granted before transmitting the audio communication.

By reducing audio latency, a system and method as described by Appellant's disclosure, and set forth in the pending claims, can promote enhanced quality of service among participants in a point-to-multipoint communication system.[32] In particular, users can conduct conversations more readily without suffering the awkwardness of extended delays and pauses between audio received from different speakers.[33] Arbitration can be performed within wireless communication devices or in wireless network equipment, such as a mobile base station equipment, enabling flexible implementation of arbitration schemes.[34]

---

[26] Paragraphs [0021], [0023] and [0030].
[27] Paragraphs [0022], [0030] and [0035].
[28] Paragraph [0022].
[29] Paragraph [0022].
[30] Paragraph [0023].
[31] Paragraph [0023].
[32] Paragraph [0024].
[33] Paragraph [0024].
[34] Paragraph [0024].

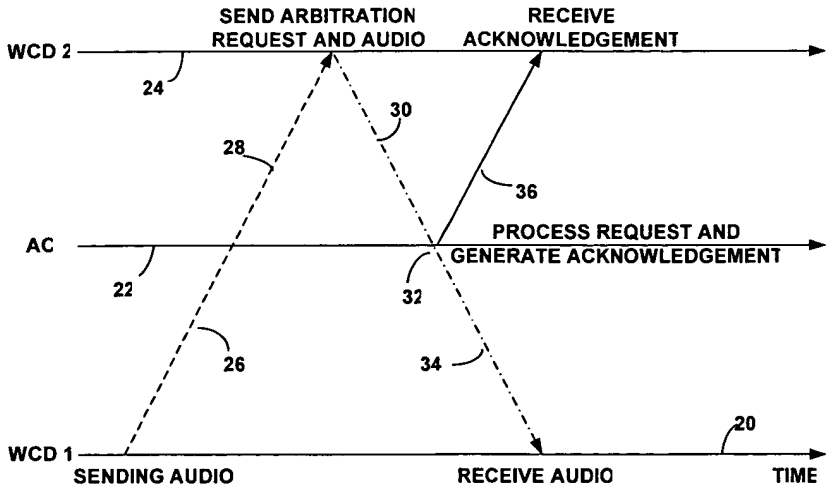


FIG. 2

FIG. 2 of Appellant's disclosure illustrates an example of accelerated arbitration, in accordance with an embodiment of the claimed invention, and is reproduced above.[35] FIG. 2 illustrates arbitration by base station 12 in response to a request for access to the broadcast link by a wireless communication device 14. In FIG. 2, line 20 indicates the perspective of a first wireless communication device (WCD 1), line 22 indicates the perspective of an arbitration controller (AC), and line 24 indicates the perspective of a second wireless communication device (WCD 2). Each of lines 20, 22, 24 represents the elapse of time from left to right as arbitration and communication take place within system 10. In FIG. 2, the arbitration controller is implemented in the network. In other embodiments, as shown in FIG. 4, the arbitration controller may be implemented elsewhere, such as within a wireless communication device.

Initially, in the example of FIG. 2, WCD 1 has broadcast priority and is sending an audio communication (26) pursuant to a previous arbitration.[36] The arbitration controller directs the audio over the broadcast link to one or more wireless communication devices, including WCD 2 (28). When WCD 2 desires access to the broadcast link, it sends not only an access request (30), but also the audio communication (30) ("SEND ARBITRATION REQUEST AND AUDIO").[37] The request and audio may be sent simultaneously or in rapid succession.[38] In

[35] See also paragraph [0033].
[36] Paragraph [0034].
[37] Paragraph [0034].
[38] Paragraph [0034].

either case, WCD 14 does not wait for an acknowledgement from the arbitration controller (AC) to send the audio.[39]

In the example of FIG. 2, the arbitration controller processes the request (32) and generates an acknowledgement.[40] If the request is granted, the arbitration controller directs the audio from WCD 2 over the broadcast link to other users, including WCD 1 (34).[41] In addition, the arbitration controller may send an acknowledgement that the request has been granted to WCD 2 (36).[42] Upon receipt of the acknowledgement that the request has been granted, the participant associated with WCD 2 may receive a notification that the access request was successful.[43]

Consequently, the participant can be certain that the previous audio communication was successfully transmitted over the broadcast link, and may continue with transmission of the remainder of the audio communication.[44] However, there is no need to wait for grant of the access request in order to send the audio. Instead, upon grant, the audio that has already been transmitted to the arbitration controller, or other network equipment, is transmitted to other WCDs in the system, such as WCD 1.

In the event the access request is not granted, the arbitration controller sends an unfavorable acknowledgement to WCD 2, and the arbitration controller does not direct the audio from WCD 2 over the broadcast link to other users.[45] In this case, the audio transmission received from WCD 2 may simply be discarded.[46] The arbitration controller directs the appropriate network equipment to allocate the broadcast link to another user or leave the broadcast link allocated to an existing user.[47] The audio may be temporarily buffered by the network equipment, e.g., base station 12, while the arbitration of the access request is

[39] Paragraph [0034].
[40] Paragraph [0034].
[41] Paragraph [0035].
[42] Paragraph [0035].
[43] Paragraph [0035].
[44] Paragraph [0035].
[45] Paragraph [0037].
[46] Paragraph [0037].
[47] Paragraph [0037].

processed.[48] Upon denial of the access request, the arbitration controller may direct that the buffered audio simply be purged.[49]

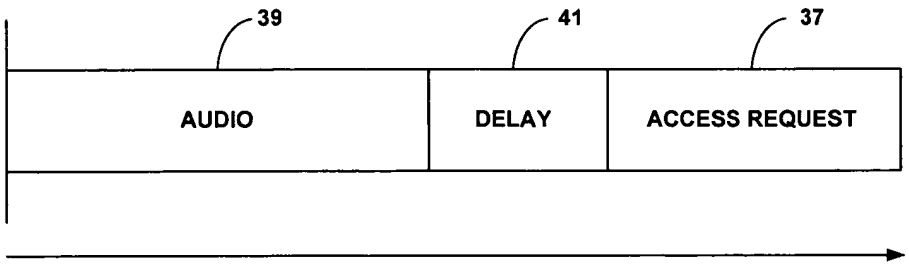


FIG. 3

With reference to FIG. 3 of Appellant's disclosure, reproduced above, a wireless communication device 14 transmits an access request 37 to base station 12 when access to the broadcast link is desired.[50] Access request 37 is accompanied by all or part of an audio communication 39 made by the user of the wireless communication device 14.[51] Hence, wireless communication device 14 transmits the audio with the access request.

As noted in Appellant's disclosure, the audio may follow immediately after the access request 37 or be separated by a slight time delay 41.[52] In addition, in some embodiments, the audio communication itself may serve as the access request.[53] For example, an arbitration controller may interpret the audio as an access request. In either case, wireless communication device 14 transmits the audio with the access request, and without the delay involved in waiting for an acknowledgement that the access request has been granted.[54] Upon receipt of an unfavorable acknowledgement, i.e., that the access request is denied, the audio transmission is terminated.

Independent claim 1 defines a method comprising transmitting a request for access to a broadcast link in a point-to-multipoint communication system, transmitting audio with the access

[48] Paragraph [0031].
[49] Paragraph [0037].
[50] See also Paragraph [0045].
[51] Paragraph [0045].
[52] Paragraph [0045].
[53] Paragraph [0045].
[54] Paragraph [0045].

request, and terminating the audio transmission in the event the access request is denied. Claims 2-11 are dependent on claim 1.

Independent claim 12 defines a method comprising receiving a request for access to a broadcast link in a point-to-multipoint communication system, receiving audio with the access request, and transmitting the audio via the broadcast link in the event the access request is granted. Claims 13-19 are dependent on claim 12.

Independent claim 20 recites a wireless communication device comprising a wireless transmitter, and a processor that controls the transmitter to transmit a request for access to a broadcast link in a point-to-multipoint communication system, transmit audio with the access request, and terminate the audio transmission in the event the access request is denied. Claims 21-25 are dependent on claim 20.

Independent claim 26 specifies an arbitration controller for a point-to-multipoint communication system. The arbitration controller comprises a processor that receives a request for access to a broadcast link from a wireless communication device in a point-to-multipoint communication system. The wireless communication device transmits audio with the request for access. The processor determines whether to grant the access request, and directs transmission of the audio via the broadcast link in the event the access request is granted. Claims 27-32 are dependent on claim 26.

Independent claim 33 recites a computer-readable medium carrying instructions to cause a processor in a wireless communication device in a point-to-multipoint communication system to perform a method substantially as set forth in claim 1.

Independent claim 34 recites a computer-readable medium carrying instructions that cause a processor in network equipment in a point-to-multipoint communication system to perform a method substantially as set forth in claim 12.

Independent claim 35 recites a method comprising transmitting a request for access to a broadcast link in a point-to-multipoint communication system from a wireless communication device, receiving audio from a user of the wireless communication device, transmitting the audio from the wireless communication device before receiving an acknowledgement that the access request is granted, and terminating the audio transmission if a denial of the access request is received. Claim 36 is dependent on claim 35.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-36 stand rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent Application No. 0,321,672 A2 to Lynk (Lynk) in view of Great Britain Published Patent Application No. 2,336,975A to Stevens (Stevens).

ARGUMENT

In the final Office Action, the Examiner rejected claims 1-36 under 35 U.S.C. 103(a) as being unpatentable over European Patent Application No. 0,321,672 A2 to Lynk (Lynk) in view of Great Britain Published Patent Application No. 2,336,975A to Stevens (Stevens).

Appellant respectfully submits that the rejection of claims 1-36 in view of Lynk and Stevens is in error and should be reversed. Neither Lynk nor Stevens, taken alone or in combination, discloses or suggests the inventions defined by Appellant's claims. Moreover, the Lynk and Stevens references provide no teaching that would have suggested modification to arrive at the claimed invention.

Although the Examiner again relied on both Lynk and Stevens, the grounds of rejection advanced in the final Office Action mailed December 16, 2004 seem to have shifted significantly, relative to the previous Office Action mailed May 10, 2004. In the final Office Action, the Examiner relied extensively on newly identified passages within Stevens concerning storage of the contents of a call when a communication channel is unavailable. In particular, in the "Response to Arguments" section of the final Office Action mailed December 16, 2004, the Examiner made new observations concerning the Stevens reference, which was originally cited for teachings secondary to those of Lynk.

The "Response to Arguments" section principally referred to the Stevens reference. However, the grounds of rejection advanced under point 2 of the Office Action seemed to be identical to the grounds of rejection in the previous Office Action. In particular, the grounds of rejection at point 2 were primarily based on Lynk. In its reliance on Stevens, the Examiner's Response to Arguments seemed to be inconsistent with the grounds of rejection in point 2. For example, it appears that the Examiner relied on various aspects of Stevens to replace teachings previously alleged to be present in Lynk.

In light of the newly cited aspects of Stevens, Appellant questions whether the finality of the Office Action mailed December 16, 2004 was proper. Nevertheless, the inapplicability of both Stevens and Lynk to the claimed invention should be clear in view of the remarks that follow. The Examiner's reliance on both Lynk and Stevens, relative to the requirements of Appellant's claims, is misplaced. The Examiner seems to have misinterpreted either the Lynk and Stevens references or the pertinent requirements of Appellant's claims. The differences between the claimed invention and the prior art are discussed in detail below.

Contrary to the requirements of pending claims 1-11, 20-33, or claims 35 and 36, Lynk and Stevens do not disclose transmission of audio with an access request. Similarly, Lynk and Stevens do not disclose reception of audio with an access request, as defined by claims 12-19 and 34.

Lynk and Stevens also fail to disclose or suggest termination of an audio transmission in the event the access request is denied, as set forth in claims 1-11, 20-25, 33, 35 and 36. In addition, Lynk and Stevens do not disclose or suggest transmission of audio from a wireless communication device before receiving an acknowledgement that the access request is granted, as set forth in claims 35 and 36.

Lynk and Stevens fail to disclosure several additional features set forth in various dependent claims.

The discussion below addresses the rejections in terms of the limitations set forth in the various claims.

Claims 1-34 - Transmission or Reception of Audio with Access Request

Neither Lynk nor Stevens makes any mention of the transmission of audio with an access request in a point-to-multipoint communication system, as required by Appellant's claims 1-11 and 20-33, nor the reception of audio with an access request in such a system, as required by claims 12-19 and 34.

Lynk describes the buffering of voice data when a subscriber initiates a transmission by depressing a push-to-talk (PTT) button, followed by delayed transmission of the voice data after the grant of an access request. Likewise, Stevens describes storage of call content when it is determined that a suitable communication path is not available, i.e., after an access request has

actually been denied, or after an access request has been granted to at least one mobile communication unit. According to Stevens, the contents of a call can be stored in a mobile radio unit or in a base station. In each case, however, the call contents are stored when a communication path is not available,[55] or when an access request to at least one mobile communication unit has been granted.[56] Stevens indicates that this approach "contrasts with . . . simply refusing to connect a call if the communication path to . . . at least one of the target mobile radio units is not available."[57]

In support of the final rejection, the Examiner characterized Lynk as disclosing transmission of a request for access to a broadcast link in a point-to-multipoint communication system, and transmission of audio with the access request. With respect to claims 1, 12, 13, 20, 26, 27, 33 and 34, the Examiner acknowledged that Lynk does not teach terminating the audio transmission in the event the access request is denied.

The Examiner cited Stevens, however, as teaching the termination of an audio transmission when an access request is denied. On this basis, the Examiner concluded that it would have been obvious to modify the Lynk system in view of Stevens to terminate an audio transmission when an access request is denied "in order to transmit information only to the channels available in order to avoid connection delays."

Appellant respectfully submits that the Examiner has misinterpreted the Lynk reference. In particular, Lynk makes no mention of the transmission or reception of audio with an access request, as defined by claims 1-34. As mentioned above, Lynk describes the buffering of voice data when a subscriber initiates a transmission by depressing a push-to-talk (PTT) button, followed by delayed transmission of the voice data only upon receipt of a grant. For example, Lynk states:

> PTT starts voice buffering and initiates a request for channel (103). Some time after receiving the request (104), the central controller finds an available channel,

---

[55] Abstract; page 2, lines 10-12 ("if a suitable communication path is not available, then storing the contents of said call as a message for later transmission"); page 2, lines 31-35 ("means to store the contents of said call as a message for later transmission to those mobile radio units for which it is determined that no suitable communication path is available"); page 3, lines 1-10 ("it is checked if there is a suitable communication path form the caller to the target mobile radio unit . . . If a suitable communication path is not available, the contents of the call are stored for future transmission").

[56] Page 8, line 34, to page 9, line 9.

[57] Page 3, line 36, to page 4, line 3.

> assigns it to the call, and sends a grant message (105) to the requesting unit. The delay may be longer than the time for which the subscriber speaks, as shown here. The requesting unit receives the grant (106) and begins transmission of reproduced voice from the buffer (107).[58]

Hence, Lynk does not contemplate transmission of audio with an access request, as required by Appellant's claims 1-11 and 33, nor reception of audio with an access request, as required by claims 12-19 and 34. Similarly, Lynk makes no mention of an arbitration controller comprising a processor that receives audio with a request for access to a broadcast link, and directs transmission of the audio via the broadcast link in the event the access request is granted, as set forth in claims 26-32.

According to Lynk, voice buffering permits a subscriber to transmit an access request and "immediately begin to speak without waiting to receive permission to access the channel."[59] In particular, a subscriber unit "locally records the [voice] information to be transmitted."[60] The subscriber unit transmits the recorded voice information only "upon being assigned a channel."[61] FIG. 4 of Lynk, reproduced below, very clearly illustrates the process described by Lynk in terms of transmitting a request R (103), locally buffering voice ("Calling Truck 1") (102), waiting for a grant G (106), and only then transmitting the buffered voice ("Calling Truck 1") (107).

[58] Col. 6, lines 40-48.
[59] Col. 3, lines 39-42.
[60] Col. 3, lines 43-46.
[61] Col. 3, lines 43-46.

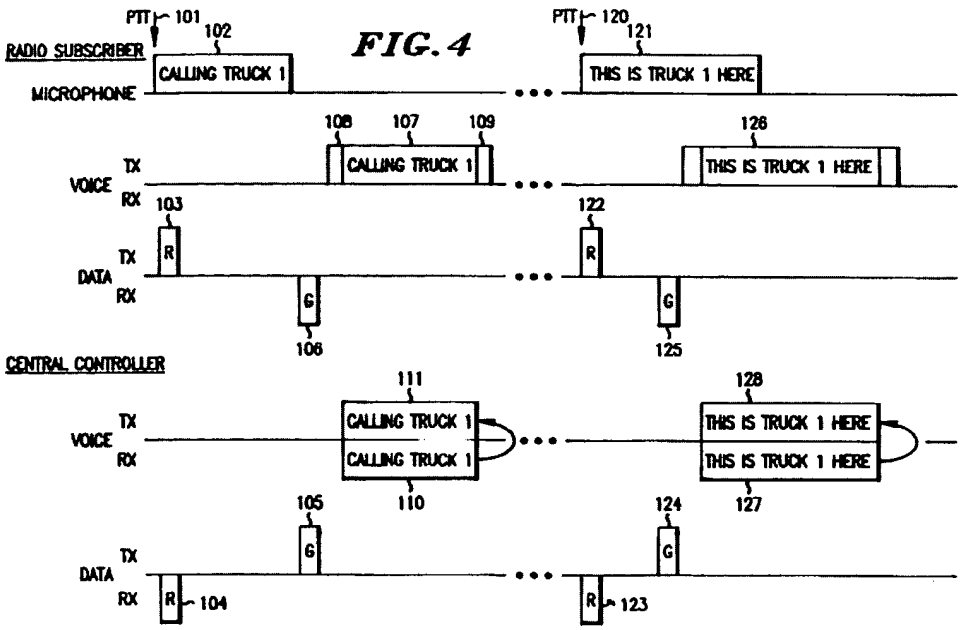


FIG. 4

Lynk makes no mention of the transmission or reception of audio with an access request,. In contrast, Lynk describes the buffering of voice data when a subscriber initiates a transmission by depressing a push-to-talk (PTT) button, followed by delayed transmission of the voice data after the grant G of an access request R. Expanded reliance on Stevens in the final Office Action seems to indicate that the Examiner may agree, at least in part, with Appellant's previous differentiation of Lynk. Stevens is discussed in further detail below.

In summary, Lynk does not suggest transmission or reception of audio with an access request, as indicated by the Examiner, but rather buffering of voice data while an access request is negotiated. This can result in undesirable latency, and is fundamentally different from the claimed invention. Consequently, at least to the extent it relies on Lynk, the rejection under section 103 is improper and should be reversed.

The Stevens reference provides no additional teaching that would have suggested modification of the Lynk system to provide transmission or reception of audio with an audio request, as claimed. In particular, Stevens makes no mention of the transmission of audio with an access request, as required by claims 1-11, 20-33, 35 and 36, nor the reception of audio with an access request, as set forth in claims 12-19 and 34.

Stevens describes a mobile radio system in which the contents of a call are stored when a suitable communication path for a target mobile radio unit is not available. The call contents are

stored as a message for later transmission to the target mobile radio unit when a communication path becomes available, i.e., when an access request is granted. According to Stevens, the contents of a call can be stored in a mobile radio unit or in a base station. In each case, however, the call contents are stored when a communication path is not available. In one embodiment, call contents are stored if access to a communication path to at least one of a plurality of mobile radio units is granted.[62] In this case, however, Stevens still does not describe the transmission of the call contents with an access request.

Stevens describes a method comprising "attempting a call to at least one target mobile radio unit . . . and if a suitable communication path is not available, then storing the contents of said call as a message for later transmission."[63] Consistent with this method, Stevens describes a "means to store the contents of said call as a message for later transmission to those mobile radio units for which it is determined that no suitable communication path is available."[64]

Stevens further states that "it is checked if there is a suitable communication path from the caller to the target mobile radio unit," and "[i]f a suitable communication path is not available, the contents of the call are stored for future transmission."[65] Stevens indicates that this approach "contrasts with . . . simply refusing to connect a call if the communication path to . . . at least one of the target mobile radio units is not available."[66]

According to Stevens, by storing call contents when a communication path is not available, "a group voice call to plural mobile radio units . . . will go ahead without having to wait for suitable radio channels to be available for each of the target mobile radio units."[67] Hence, unavailability of a communication path to one of the plural radio units does not prevent communication with the other radio units. Instead, the call proceeds for available radio units, while the call contents are stored for later transmission to the unavailable radio unit(s). In this manner, "all the locatable units will eventually receive the call."[68] In particular, Stevens refers to a series of later transmission attempts by which the call contents may be received.[69] On the other

[62] Page 8, line 34, to Page 9, line 9.
[63] Page 2, lines 13-22.
[64] Page 2, lines 31-35.
[65] Page, 3, lines 1-10.
[66] Page 3, line 36, to page 4, line 3.
[67] Page 4, lines 5-10.
[68] Page 4, lines 5-10.
[69] Page 4, lines 30-33.

hand, if a communication path is available, as indicated by the grant of an access request, Stevens indicates that the call proceeds in a normal manner.[70]

Stevens further indicates that, when a communication path is not available, the call contents may be stored in a base station or mobile radio unit, as described above. Stevens (like Lynk) describes the buffering of a call in a "storage means" in a mobile radio unit, followed by transmission of the buffered call when a suitable communication path is available. For example, Stevens states that the storage means may "act as a buffer to store part or all of the a message even when suitable communication paths are available and a call has been granted to one or more of the target mobile units."[71] In this case, a call must be granted for at least one target mobile unit in order to store the message for other target mobile units.[72]

Hence, Stevens describes (1) the storage of a call when a communication path is not available, (2) the local buffering of a call in a mobile radio unit for transmission when a suitable communication path becomes available, or (3) the buffering of a call in a mobile radio unit or elsewhere for mobile units when a call has been granted to at least one other mobile unit. In no event, however, does Stevens suggest transmission or reception of audio with a request for access, as required by claims 1-34.

Stevens fails to disclose or suggest any embodiment in which audio is transmitted or received with an access request. In her analysis, the Examiner stated that Stevens, at page 5, line 37, to page 6, line 12, describes that audio is transmitted to a base station, "along with the access request." The Examiner has misinterpreted the Stevens reference in this regard. Stevens does not provide such a teaching.

The Examiner reasoned that, for the contents of a call to be stored at a base station, it must first be transmitted from a mobile radio unit. Certainly, call contents must be transmitted in order to be stored at the base station. Yet, this does not mean that the call contents are transmitted with the access request, as required by Appellant's claims. Rather, as described by Stevens, the call contents are stored after an access request is denied, i.e., when a suitable communication path is not available, or when an access request is granted for at least one mobile radio unit.

---

[70] Page 3, lines 25-28 ("Where a suitable communication path . . . is available the call most preferably proceeds as normal").
[71] Page 8, line 34, to Page 9, line 9.
[72] Page 8, line 34, to Page 9, line 3.

In view of the lack of any prior art teaching that would have suggested modification of Lynk or Stevens to transmit or receive audio with an access request, the rejection of claims 1-34 is improper and should be reversed.

Claims 3, 4, 15, 16, 22, 23, 35 and 36 - Audio Transmission Before/Without Grant

Lynk and Stevens also fail to disclose or suggest transmitting audio from a wireless communication device before receiving an acknowledgement that an access request is granted, as set forth in claims 3, 15, 22, 35 and 36. Claims 4, 16, and 23 require that the audio is transmitted without receiving an acknowledgement that the access request is granted.

Lynk stores voice data pending the outcome of an access request, and then retrieves the voice data from memory for transmission if the access request is granted. In particular, Lynk describes the buffering of voice data when a subscriber initiates a transmission by depressing a push-to-talk (PTT) button, followed by delayed transmission of the voice data upon receipt of a grant.

Lynk requires the grant of an access request before audio is transmitted and, in that case, the audio includes buffered audio. In the passage cited by the Examiner[73], Lynk specifically states that the "buffer will hold the recorded voice until grant of the channel; then it will reproduce the voice information." This passage appears to be directly contrary to the requirements of claim 3, 15, and 22. Accordingly, it is unclear why the Examiner referred to this portion of Lynk in the Office Action.

Contrary to claims 4, 16, and 23, Lynk requires the grant of an access request before transmitting the buffered voice data. In another passage cited by the Examiner[74], Lynk refers to the reproduction of voice data from a buffer as further speech continues to fill the buffer. This passage appears to be wholly irrelevant to the requirements set forth in claims 4, 16, and 23. In particular, the filling of a local buffer with speech data per Lynk provides no teaching concerning the relationship between audio transmission and the grant of access request.

Stevens likewise does not suggest transmission of audio before or without an access request grant. Stevens describes storage of call contents when a suitable communication path is not available, i.e., after denial of an access request, or after the grant of an access request grant to

[73] Col. 5, lines 41-44.
[74] Col. 7, lines 5-8.

at least one mobile communication units. The Examiner pointed to page 3, lines 25-35, of Stevens, and stated "where broadly interpreted, the audio data is transmitted to the BS or transceiver without receiving an acknowledgement that the access request is granted." Appellant respectfully submits that the Examiner appears to have misinterpreted the Stevens reference. The cited passage in Stevens explicitly states that a call proceeds when a suitable communication path is available, i.e., when an access request is granted.

Where multiple communication paths are involved, Stevens requires that at least some of the communication paths are available prior to transmission of a call. In particular, Stevens states that "[w]here a suitable communication path to a located target mobile radio unit is available the call most preferably proceeds as normal."[75] Stevens further states that "where a group of plural mobile radio units is called, the call can be connected to the available units and a message stored for the rest." [76] Hence, from Stevens, it appears that a call is connected once a suitable communication path is available, while the call contents can be stored for those units for which a communication path is unavailable. In such a case, it seems that the grant of an access request is necessary before the call contents are transmitted.

If the Examiner's point is that Stevens describes transmission of call contents when some of the communication paths are not available, this seems to overlook the fact that at least one communication path must be available, and that access is granted with respect to that communication path. Accordingly, transmission of the call contents must await a grant. Therefore, in Stevens, audio is not transmitted before receiving an acknowledgement that an access request is granted, as required by claim 3, 15, 22, 35, and 36, or without receiving an acknowledged that an access request is granted, as required by claims 4, 16, and 23.

Lynk and Stevens fail to suggest the requirements of claims 3, 4, 15, 16, 22, 23, 35 and 36 for substantially the reasons described above with respect to the limitations concerning transmission and reception of audio with an access request. For these reasons, the rejections of claims rejections of claims 3, 4, 15, 16, 22, 23, 35 and 36 should be reversed.

---

[75] Page 3, lines 25-27.
[76] Page 3, lines 28-31.

Claims 1-11, 20-25, 33, 35 and 36 - Termination of Audio Transmission Upon Denial

Lynk and Stevens provide no teaching that would have suggested termination of an audio transmission in the event an access request is denied, as set forth in claims 1-11, 20-25, 33, 35 and 36.

Again, neither Lynk nor Stevens contemplates transmission of audio with an access request, nor transmission of audio before an access request is granted. Accordingly, there is no audio transmission to terminate in the Lynk and Stevens systems.

In the final rejection, the Examiner noted, with reference to page 3, line 36, to page 4, line 13, that Stevens describes "refusing to connect a call if the communication path . . . is not available," and equated "refusing to connect" with terminating an audio transmission. The Examiner's reasoning is unsupported by the cited passage from the Stevens reference.

Stevens does not refer to terminating an audio transmission that has been transmitted with an access request. Instead, Stevens describes the prior art technique of sending nothing at all if a communication path is not available. Logically, it is not possible to terminate an audio transmission that has never even commenced. Even if "broadly interpreted," as suggested by the Examiner, this passage in the Stevens reference concerning connection refusal cannot be reasonably construed to meet the requirements of Applicant's claims concerning termination of an audio transmission.

Moreover, as apparently recognized by the Examiner, the actual technique described by Stevens does not involve termination, but rather retention, of call contents for later transmission when a communication path becomes available. In discussing the prior art technique of refusing connection and disclosing a technique in which a call is stored rather than terminated, Stevens teaches away from termination of an audio transmission. Stevens, in particular, discloses storage and retention of call content, not termination, when an access request is denied.

In the Stevens system, the stored call content is retained until a suitable communication path becomes available. Thus, the approach described by Stevens represents virtually the opposite of that specified by claims 1-11, 20-25, 33, 35 and 36. Rather than terminating the transmission of a call when an access request is denied, Stevens stores the call contents for later transmission, thereby preserving the call.

In view of the lack of any prior art teaching that would have suggested modification of Lynk or Stevens to terminate audio transmitted with an access request, the rejection of claims 1-11, 20-25, 33, 35 and 36 is improper and should be reversed.

Claims 5, 17, 24, 30, and 36 - Audio Transmission Serves as Access Request

Claims 5, 17, 24, 30, and 36 specify that at least a portion of the audio transmission serves as, or is interpreted as, the access request. Claim 30, for example, specifies that the processor of the arbitration controller of claim 26 interprets at least a portion of the audio transmission as the access request. Neither Lynk nor Stevens makes any mention of such a feature.

In the Office Action, the Examiner pointed to Col. 7, lines 4-17, of Lynk. Appellant is confused by the Examiner's reference to this section of Lynk, which appears to bear no relation to the claimed limitation. Roughly the same passage was cited with reference to claims 4, 16 and 23, and relates to the reproduction of voice data from a buffer as further speech continues to fill the buffer. This passage seems to refer to the process of voice buffering, and says nothing about the use of at least a portion of an audio transmission as the access request.

The Lynk reference does not describe transmission of audio until after an access request is granted. Therefore, this reference cannot possibly contemplate that a portion of the audio transmission actually serves as the access request. With respect to the quoted passage, the Examiner stated that "the responding caller's voice response corresponds to a channel or access request" and that the "controller may grant the access while the respondent party is still speaking (portion of the audio transmission serving as access requestors)." Appellant respectfully submits that the Examiner's comparison of the cited features of Lynk to the requirements of the claimed invention is misplaced.

In the cited passage at Col. 7, lines 4-17, Lynk does not refer to the use of an audio transmission as an access request. Instead, Lynk very clearly states that "a channel request will go to the central controller."[77] Then, the controller will respond with a channel assignment and grant, when a channel becomes available.[78] The subscriber may continue speaking while the channel request is being processed. However, the speech content does not in any way form the

[77] Col. 6, lines 56-57.
[78] Col. 6, line 57, to Col. 6, line 2.

channel request. Instead, consistent with the basic objectives of the Lynk reference, the speech content is buffered for transmission once the actual channel request is granted.

Lynk makes no mention of the transmission of audio with an access request, or the use of an audio transmission to serve as an access request. The generation of a channel request, and the buffering of voice content, are completely separate aspects of the Lynk system. As previously pointed out by Appellant, the cited passage in Lynk describes the process of voice buffering, and says nothing about the use of at least a portion of an audio transmission as the access request, as claimed. Again, the Lynk reference does not describe transmission of audio until after an access request is granted. Therefore, it is unclear how a voice response could possibly be equated with a channel request, which is sent separately in the Lynk system.

In view of the lack of any teaching that would have suggested the use of audio as an access request, the rejection of claims 5, 17, 24 and 30 is improper and should be reversed.

Claims 2, 14, and 21 - Audio Immediately Following Access Request

Claims 2, 14 and 21 further specify that the audio is transmitted immediately following transmission of the access request.

Lynk describes the transmission of buffered audio only after an access request is denied or granted, which is contrary to the requirements of claims 2, 14 and 21. Stevens describes audio transmission upon denial or grant of an access request for at least one mobile radio unit. Neither reference describes transmission of audio immediately following transmission of an access request.

In view of this difference, the rejection of claims 2, 14, and 21 is improper and should be reversed.

Claim 6 - Receiving Grant During Audio Transmission

Claim 6 requires receiving an acknowledgement that the access request is granted during transmission of the audio.

In the final Office Action, the Examiner cited Lynk, at Col. 6, lines 44-54, for such a teaching. In the cited passage, Lynk states that the time to receive a grant may be longer than the time the subscriber speaks. This simply means that a grant may be received in the Lynk system

after the audio has been buffered or during buffering. Again, Lynk teaches buffering audio for transmission only after a grant is received. In Lynk, there simply is no audio transmission during which an acknowledgement that an access request is granted could be received. Stevens provides no teaching sufficient to overcome this deficiency in Lynk.

In view of this difference, the rejection of claim 6 is improper and should be reversed.

Claims 9, 10, 18, 19, 31 - Access Denial from Wireless Communication Device

Claim 9 requires receipt of denial of an access request from a wireless communication device. Claim 10 specifies that an access request denial is generated within a wireless communication device that presently has access to a broadcast link. Claim 18 requires receiving an indication that an access request is denied from the wireless communication device. Claim 19 recites transmitting an access request to a wireless communication device that presently has access to the broadcast link. Claim 31 indicates that a processor that determines whether to grant an access request resides within a wireless communication device.

In the Office Action, the Examiner pointed to Lynk, at Col. 7, lines 49-52, as teaching the requirements of claims 9, 10, 18, and 19. However, the cited passage seems to be irrelevant. At col. 7, lines 49-52, Lynk states:

> If the wireline party answers (208), the controller initiates the channel assignment routine to assign an outbound channel. At the same time, voice buffering begins to record the response (210) of the called wireline party during the time before a channel becomes available.

The cited passage does not seem to indicate anything in regard to the processing of an access request by a wireless communication device, or the transmission of an access request to wireless communication device. Aside from the lack of any teaching relative to the processing of access request in a wireless communication device, it is notable that Lynk actually refers to a "wireline" device, and not a wireless communication device, in the cited passage.

In view of the above differences, the rejection of claim 6 is improper and should be reversed.

Claim 13 and 27 - Discarding Audio In Event Access Request is Denied

Claims 13 and 27 require discarding of the transmitted audio in the event the access request is denied. Again, Lynk and Stevens describe buffering audio for later transmission. There is no mention in these references that would have suggested discarding audio that is transmitted with an access request. Indeed, the Examiner did not appear to address the limitations of claims 13 and 27 in the final rejection.

In view of these differences, and the failure of the Office Action to address claims 13 and 27, the rejection of those claims is improper and should be reversed.

CONCLUSION

The Examiner has failed to meet the burden of establishing a prima facie case of obviousness with respect to claims 1-36. In view of Appellant's arguments, the final rejection of Appellant's claims is improper and should be reversed. Reversal of all pending rejections and allowance of all pending claims is respectfully requested.

Respectfully submitted,

Date: 7/5/05

By: /BY KENYON JENCKES REG. NO. 41,873

George Pappas
Reg. No.: 35,065

QUALCOMM, Inc.
Attn: Patent Department
5775 Morehouse Drive
San Diego, CA 92121-1714
Telephone: (858) 658-5787
Facsimile: (858) 658-2502

APPENDIX 1

THE CLAIMS ON APPEAL

Claim 1 (Original): A method comprising:

transmitting a request for access to a broadcast link in a point-to-multipoint communication system;

transmitting audio with the access request; and

terminating the audio transmission in the event the access request is denied.

Claim 2 (Original): The method of claim 1, wherein transmitting audio includes transmitting the audio immediately following transmission of the access request.

Claim 3 (Original): The method of claim 1, wherein transmitting audio includes transmitting the audio before receiving an acknowledgement that the access request is granted.

Claim 4 (Original): The method of claim 1, wherein transmitting audio includes transmitting the audio without receiving an acknowledgement that the access request is granted.

Claim 5 (Original): The method of claim 1, wherein at least a portion of the audio transmission serves as the access request.

Claim 6 (Original): The method of claim 1, further comprising receiving an acknowledgement that the access request is granted during transmission of the audio.

Claim 7 (Original): The method of claim 1, further comprising receiving the denial of the access request from an arbitration controller.

Claim 8 (Original): The method of claim 1, further comprising transmitting the audio to the broadcast link via wireless network equipment.

Claim 9 (Original): The method of claim 1, further comprising receiving the denial of the access request from a wireless communication device in the system via a wireless base station.

Claim 10 (Original): The method of claim 1, further comprising generating the denial of the access request within a wireless communication device that presently has access to the broadcast link.

Claim 11 (Original): The method of claim 1, further comprising transmitting the access request in response to actuation of a push-to-talk input medium associated with a wireless communication device.

Claim 12 (Original): A method comprising:

receiving a request for access to a broadcast link in a point-to-multipoint communication system;

receiving audio with the access request; and

transmitting the audio via the broadcast link in the event the access request is granted.

Claim 13 (Original): The method of claim 12, further comprising discarding the audio in the event the access request is denied.

Claim 14 (Original): The method of claim 12, wherein receiving audio includes receiving the audio immediately following transmission of the access request.

Claim 15 (Original): The method of claim 12, further comprising transmitting an indication that the access request is granted after receiving the audio.

Claim 16 (Original): The method of claim 12, further comprising transmitting an indication that the access request is denied after receiving the audio.

Claim 17 (Original): The method of claim 12, further comprising interpreting at least a portion of the audio transmission as the access request.

Claim 18 (Original): The method of claim 12, further comprising:

transmitting the access request to a wireless communication device in the system; and

receiving an indication that the access request is denied from the wireless communication device.

Claim 19 (Original): The method of claim 18, wherein transmitting the access request includes transmitting the access request to a wireless communication device that presently has access to the broadcast link.

Claim 20 (Original): A wireless communication device comprising:

a wireless transmitter; and

a processor that controls the transmitter to transmit a request for access to a broadcast link in a point-to-multipoint communication system, transmit audio with the access request, and terminate the audio transmission in the event the access request is denied.

Claim 21 (Original): The device of claim 20, wherein the processor controls the transmitter to transmit the audio immediately following transmission of the access request.

Claim 22 (Original): The device of claim 20, wherein the processor controls the transmitter to transmit the audio before receiving an acknowledgement that the access request is granted.

Claim 23 (Original): The device of claim 20, wherein the processor controls the transmitter to transmit the audio without receiving an acknowledgement that the access request is granted.

Claim 24 (Original): The device of claim 20, wherein at least a portion of the audio transmission serves as the access request.

Claim 25 (Original): The device of claim 20, wherein the transmitter transmits the audio to the broadcast link via wireless network equipment.

Claim 26 (Original): An arbitration controller for a point-to-multipoint communication system, the arbitration controller comprising a processor that receives a request for access to a broadcast link from a wireless communication device in a point-to-multipoint communication system, wherein the wireless communication device transmits audio with the request for access, the processor determining whether to grant the access request, and directing transmission of the audio via the broadcast link in the event the access request is granted.

Claim 27 (Original): The device of claim 26, wherein the processor directs discarding of the audio in the event the access request is denied.

Claim 28 (Original): The device of claim 26, wherein the processor directs transmission of an indication that the access request is granted or denied.

Claim 29 (Original): The device of claim 26, wherein the transmitter transmits an indication that the access request is granted or denied.

Claim 30 (Original): The device of claim 26, wherein the processor interprets at least a portion of the audio transmission as the access request.

Claim 31 (Original): The device of claim 26, wherein the processor resides within a wireless communication device in the point-to-multipoint communication system.

Claim 32 (Original): The device of claim 26, wherein the processor resides within a network server in a wide area network associated with network equipment in the point-to-multipoint communication system.

Claim 33 (Original): A computer-readable medium carrying instructions that cause a processor in a wireless communication device in a point-to-multipoint communication system to:

transmit a request for access to a broadcast link in a point-to-multipoint communication system;

transmit audio with the access request; and

terminate the audio transmission in the event the access request is denied.

Claim 34 (Original): A computer-readable medium carrying instructions that cause a processor in network equipment in a point-to-multipoint communication system to:

receive a request for access to a broadcast link in the point-to-multipoint communication system;

receive audio with the access request; and

direct transmission of the audio via the broadcast link in the event the access request is granted.

Claim 35 (Previously Presented): A method comprising:

transmitting a request for access to a broadcast link in a point-to-multipoint communication system from a wireless communication device;

receiving audio from a user of the wireless communication device;

transmitting the audio from the wireless communication device before receiving an acknowledgement that the access request is granted; and

terminating the audio transmission if a denial of the access request is received.

Claim 36 (Previously Presented): The method of claim 35, wherein at least a portion of the audio transmission serves as the access request.